

Refine Search

Search Results -

Terms	Documents
L13 same L10	10

Database:

US Pre-Grant Publication Full-Text Database
 US Patents Full-Text Database
 US OCR Full-Text Database
 EPO Abstracts Database
 JPO Abstracts Database
 Derwent World Patents Index
 IBM Technical Disclosure Bulletins

Search:

L16

Refine Search

Recall Text

Clear

Interrupt

Search History

DATE: Thursday, July 08, 2004 [Printable Copy](#) [Create Case](#)

<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ</i>			
<u>L16</u>	L13 same l10	10	<u>L16</u>
<u>L15</u>	l13 same l6	0	<u>L15</u>
<u>L14</u>	L13 same l2	0	<u>L14</u>
<u>L13</u>	plant with carcinogen	108	<u>L13</u>
<u>L12</u>	l10 and l1	0	<u>L12</u>
<u>L11</u>	L10 same l1	0	<u>L11</u>
<u>L10</u>	gene	270954	<u>L10</u>
<u>L9</u>	l6 and l1	0	<u>L9</u>
<u>L8</u>	L6 same l1	0	<u>L8</u>
<u>L7</u>	L6 same l1	0	<u>L7</u>
<u>L6</u>	mutation or mutant	101601	<u>L6</u>
<u>L5</u>	l2 and l1	0	<u>L5</u>
<u>L4</u>	l2 same l1	0	<u>L4</u>
<u>L3</u>	L2 with l1	0	<u>L3</u>

L2 transgenic
L1 plant with anthracene

43476 L2
53 L1

END OF SEARCH HISTORY

[First Hit](#) [Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

Generate Collection

Print

L16: Entry 2 of 10

File: PGPB

Jun 19, 2003

DOCUMENT-IDENTIFIER: US 20030113710 A1

TITLE: Methods for identifying genes essential to the growth of an organism

Summary of Invention Paragraph:

[0002] Identification, sequencing and characterization of genes is a major goal of modern scientific research. By identifying genes, determining their sequences and characterizing their biological function, it is possible to employ recombinant technology to produce large quantities of valuable gene products, e.g. proteins and peptides. Additionally, knowledge of gene sequences can provide a key to diagnosis, prognosis and treatment in a variety of infectious diseases and disease states in plants and animals which are characterized by inappropriate expression and/or repression of selected genes or by the influence of external factors, e.g., carcinogens or teratogens, on gene function.

[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

(FILE 'HOME' ENTERED AT 11:57:51 ON 08 JUL 2004)

FILE 'MEDLINE' ENTERED AT 11:57:57 ON 08 JUL 2004

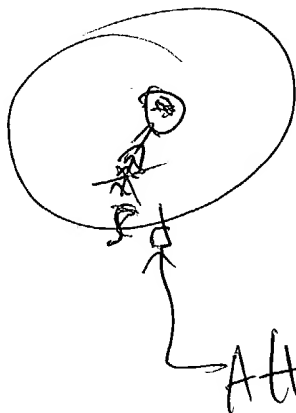
L1 42 S S. TYPHIMURIUM AND YEAST
L2 5916 S ANTHRACENE
L3 0 S L2 AND L1
L4 79652 S YEAST
L5 23 S L4 AND L2
L6 23 DUP REM L5 (0 DUPLICATES REMOVED)

FILE 'MEDLINE, CANCERLIT, BIOTECHDS, CAPLUS, BIOSIS, EMBASE' ENTERED AT
12:03:03 ON 08 JUL 2004

L7 81540 S L2
L8 492119 S L4
L9 1511133 S MUTATION OR MUTAN?
L10 3497842 S GENE
L11 786993 S L10 AND L9
L12 210 S L11 AND 8 AND L7
L13 96 DUP REM L12 (114 DUPLICATES REMOVED)
L14 1541211 S PLANT
L15 1 S L14 AND L13
L16 5442700 S IN VITRO OR CULTU?
L17 242 S L16 AND L9 AND L10 AND L7
L18 111 DUP REM L17 (131 DUPLICATES REMOVED)
L19 2007374 S YEAST OR PLANT
L20 9 S L19 AND L18
L21 46 S L18 AND (ASSA? OR IDENTIF?)
L22 1541211 S PLANT
L23 2148 S L22 AND L7
L24 786993 S L9 AND L10
L25 9 S L24 AND L23
L26 8 DUP REM L25 (1 DUPLICATE REMOVED)
L27 232413 S TRANSGENIC
L28 9 S L27 AND L23
L29 6 DUP REM L28 (3 DUPLICATES REMOVED)
L30 40 S L23 AND L9
L31 26 DUP REM L30 (14 DUPLICATES REMOVED)
L32 58 S L23 AND L10
L33 41 DUP REM L32 (17 DUPLICATES REMOVED)

=>

L31 ANSWER 11 OF 26 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:538180 CAPLUS
 DN 129:270149
 TI Antimutagenic constituents of *Casimiroa edulis* with potential cancer chemopreventive activity
 AU Ito, Aiko; Shamon, Lisa A.; Yu, Boyang; Mata-Greenwood, Eugenia; Lee, Sang Kook; Van Breemen, Richard B.; Mehta, Rajendra G.; Farnsworth, Norman R.; Fong, Harry H. S.; Pezzuto, John M.; Kinghorn, A. Douglas
 CS Program for Collaborative Research in the Pharmaceutical Sciences and Department of Medicinal Chemistry and Pharmacognosy College of Pharmacy, University of Illinois at Chicago, Chicago, IL, 60612, USA
 SO Journal of Agricultural and Food Chemistry (1998), 46(9), 3509-3516
 CODEN: JAFCAU; ISSN: 0021-8561
 PB American Chemical Society
 DT Journal
 LA English
 AB An Et acetate extract derived from the seeds of the medicinal and food plant *C. edulis* inhibited mutagenicity induced by 7,12-dimethylbenz[*a*]anthracene (DMBA) with *Salmonella typhimurium* strain TM677. It also showed complete inhibition of DMBA-induced preneoplastic lesions with an in vitro mouse mammary gland organ culture system at a concentration of 10 µg/mL. Bioassay-guided phytochem. investigation of this extract using antimutagenicity as a monitor led to the isolation of 4 furocoumarins, constituted by the known compds. phellopterin (1) and isopimpinellin (2) and the novel compds. (R,S)-5-methoxy-8-[(6,7-dihydroxy-3,7-dimethyl-2-octenyl)oxy]psoralen (3) and (R,S)-8-[(6,7-dihydroxy-3,7-dimethyl-2-octenyl)oxy]psoralen (4). Four known alkaloids, casimiroin (5), 4-methoxy-1-methyl-2(1H)-quinolinone (6), 5-hydroxy-1-methyl-2-phenyl-4-quinolone (7), and γ-fagarine (8), and 2 known flavonoids, zapotin (9) and 5,6,2'-trimethoxyflavone (10), were also isolated. Of these isolates, compds. 3 and 5 showed the most potent antimutagenic effects in the forward mutagen assay utilizing *S. typhimurium* strain TM677, whereas casimiroin (5) and 5,6,2'-trimethoxyflavone (10) significantly inhibited the formation of DMBA-induced preneoplastic lesions in mouse mammary gland organ culture.



L21 ANSWER 11 OF 46 MEDLINE on STN
 AN 91000223 MEDLINE
 DN PubMed ID: 2119594
 TI Relationship between chemically induced Ha-ras **mutation** and transformation of BALB/c 3T3 cells: evidence for chemical-specific activation and cell type-specific recruitment of oncogene in transformation.
 AU Nakazawa H; Aguelon A M; Yamasaki H
 CS International Agency for Research on Cancer, Lyon, France.
 NC RO1 CA40534 (NCI)
 SO Molecular carcinogenesis, (1990) 3 (4) 202-9.
 Journal code: 8811105. ISSN: 0899-1987.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199011
 ED Entered STN: 19910117
 Last Updated on STN: 19970203
 Entered Medline: 19901105
 AB BALB/c 3T3 cells were exposed to 7,12-dimethylbenz[a]**anthracene** (DMBA) and resultant transformed foci were analyzed for the presence of A182----T **mutation** at codon 61 of Ha-ras (a **mutation** found in many DMBA-induced animal tumors). None of the 30 independently cloned transformed cell lines contained such a **mutation**. In order to see whether DMBA is able to induce this **mutation** in BALB/c 3T3 cells, we developed a method sensitive enough to detect this specific **mutation** at the frequency of 10^{-6} . Employing this **assay**, we found time- and dose-dependent induction by DMBA of Ha-ras A182----T **mutation** in BALB/c 3T3 cells; for example, 2 wk after exposure to 100 micrograms/mL DMBA, 1.4 in 1×10^4 cells contained this specific **mutation**. On the other hand, other agents that also induce BALB/c 3T3 cell transformation, such as 3-methylcholanthrene (MCA), 12-O-tetradecanoylphorbol-13-acetate (TPA), N-methyl-N'-nitro-N-nitrosoguanidine (MNNG), or ultraviolet light, did not induce the **mutation** at detectable frequency (less than 10^{-6}). These results suggest that DMBA efficiently induces Ha-ras **mutation** in BALB/c 3T3 cells but that this **mutation** is not recruited in the process of cell transformation. A hypothesis of carcinogen-specific **mutation** of Ha-ras **gene** and its tissue (cell type)-specific recruitment in carcinogenesis is proposed.

L21 ANSWER 15 OF 46 CANCERLIT on STN
AN 93690104 CANCERLIT
DN 93690104
TI Molecular analysis of forward and reverse somatic mutations at the human APRT locus.
AU Zhu Y
CS Indiana Univ.
SO Diss Abstr Int [B], (1992) 53 (6) 2643.
ISSN: 0419-4217.
DT (THESIS)
LA English
FS Institute for Cell and Developmental Biology
EM 199305
ED Entered STN: 19941107
Last Updated on STN: 19941107
AB Somatic cell **mutation** plays an important role in the etiology of a number of genetic diseases and many types of cancer (eg, retinoblastoma and Wilms' tumor). This thesis describes the use of the human adenine phosphoribosyltransferase (APRT) **gene** in cell **culture** for study of the nature and consequences of spontaneous and induced mutations at a typical mammalian locus. Two APRT-deficient human cell lines were analyzed. An ICR170H-induced fibrosarcoma cell line, HTD114, was shown to have a single G insertion in an existing string of 5Gs in exon 2 of one allele and in exon 3 of the second allele. A hepatoma cell line, 3B225H, was shown to have a G to C transversion at the 3rd bp of intron 1, which results in very low levels of normal APRT mRNA. With an APRT reversion **assay** in HTD114 cells, mutagens and carcinogens (such as mitomycin C, benzo[a]pyrene diol epoxide, 2-aminoanthracene, 7,12-dimethylbenz[a]**anthracene** and aflatoxin B1) were demonstrated to induce a single base pair deletion that resulted in frame restoration. The APRT reversion rates induced by these chemicals, except for mitomycin C ($1.2-3.3 \times 10^{-5}$), are about 10^3 -fold increased over the rate of spontaneous reversion. Rat liver homogenate coupled with NADPH cofactors was an essential activation system for some mutagenesis. However, mitomycin C and other mutagens produced little effect on the induction of interallelic mitotic recombination. By selection and analysis of Aprt- **mutants** in a human cell line heterozygous at APRT, the molecular mechanisms of loss of APRT activity were investigated. These included loss of the wild-type allele (62%) and intragenic mutations (38%). Loss of the wild-type APRT allele was frequently accompanied by loss of the relatively close proximal marker D16S77, but not the more distant proximal marker D16S4. These data indicate that high-frequency mitotic recombination or deletion occurred at the region between D16S77 and D16S4 on chromosome 16. Also, point mutations were demonstrated to be responsible for the loss of APRT activity in other clones. These demonstrated mechanisms for expression of a recessive phenotype at an autosomal locus are similar to those found in retinoblastoma and other tumors. Thus, APRT may be used to model loci important to carcinogenesis. (Full text available from University Microfilms International, Ann Arbor, MI, as Order Number AAD92-31641.)

L21 ANSWER 30 OF 46 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 1981:132626 BIOSIS
DN PREV198171002618; BA71:2618
TI **MUTATION** OF CHINESE HAMSTER CELLS BY NEAR UV ACTIVATION OF PRO
MUTAGENS.
AU BARNHART B J [Reprint author]; COX S H
CS GENETIC TOXICOL MICROBIOL SECTION, MIDWEST RES INST, 425 VOLKER BOULEVARD,
KANSAS CITY, MO 64110 USA, USA
SO Mutation Research, (1980) Vol. 72, No. 1, pp. 135-142.
CODEN: MUREAV. ISSN: 0027-5107.
DT Article
FS BA
LA ENGLISH
AB A tissue-culture assay for mutagenesis and
cytotoxicity incorporating near near (NUV) light activation of
polyaromatic hydrocarbons (PAH) was developed. **Cultures** of
Chinese hamster ovary (CHO) cells growing in suspension **culture**
were inoculated with benzo[a]pyrene (B[a]P), 7,12-dimethylbenzanthracene
(DMBA) or shale-oil retort-water and exposed to light from a high-pressure
mercury lamp fitted with a Corning NUV bandpass filter. This light source
permitted activation of PAH and the shale-oil water and precluded
detectable damage to DNA. Neither the PAH nor the NUV alone had any
effect on cell survival or **mutation** frequencies, but the
chemicals plus NUV were extremely effective in producing mutations to
6-thioguanine resistance due to mutations at the hgprt [hypoxanthine
guanine phosphoribosyltransferase] **gene**.

L20 ANSWER 2 OF 9 MEDLINE on STN
 AN 90081356 MEDLINE
 DN PubMed ID: 2687628
 TI Summary of complementation groups of UV-sensitive CHO cell **mutants** isolated by large-scale screening.
 AU Busch D; Greiner C; Lewis K; Ford R; Adair G; Thompson L
 CS Department of Environmental and Drug-Induced Pathology, Armed Forces Institute of Pathology, Washington, DC 20306-6000.
 NC CA04484 (NCI)
 GM22021 (NIGMS)
 RR00961 (NCRR)
 SO Mutagenesis, (1989 Sep) 4 (5) 349-54.
 Journal code: 8707812. ISSN: 0267-8357.
 CY ENGLAND: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199001
 ED Entered STN: 19900328
 Last Updated on STN: 19970203
 Entered Medline: 19900125
 AB A summary is given for the lineage and complementation group assignments of 153 UV-sensitive **mutants** of the CHO AA8 cell line. The distribution of **mutants** among six complementation groups was highly non-random, with the great majority of the isolates belonging to groups 1 and 2. This asymmetry is consistent with the known hemizygosity of these two linked loci in CHO cells. The relative numbers of **mutants** induced in group 2 was found to depend greatly on the type of mutagen used. Mutagenesis with UV radiation, ethyl methanesulfonate (EMS), N-methyl-N'-nitro-N-nitrosoguanidine and 7-bromomethylbenz[a]**anthracene** produced high frequencies of group 2 **mutants**. In contrast, ICR170 and ICR191, which are thought to produce mostly frameshift mutations, yielded very few **mutants** in group 2. These results are of particular importance in light of the recent finding that the human ERCC2 **gene**, which corrects group 2 **mutants**, has very strong homology with the **yeast gene** RAD3. RAD3 is an essential **gene** for viability in **yeast**, and the low recovery of group 2 **mutants** using the frameshift agents strongly suggests that frameshift mutations tend to be lethal in the hamster ERCC2 locus. Several mutagen-sensitive double **mutants** were isolated in two-step selections from EMS-, mitomycin C- or UV-sensitive parental cells, including the line UVU1, the first mammalian line with two mutations that affect UV sensitivity. The first **mutation** inactivated excision repair, and the second **mutation** appears to have affected some other recovery process. UVU1 should be useful for studying recovery processes that are separate from nucleotide excision repair.

L21 ANSWER 35 OF 46 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
 on STN
 AN 1998255917 EMBASE
 TI Use of primary rat and human hepatocyte sandwich **cultures** for
 activation of indirect carcinogens: Monitoring of DNA strand breaks and
gene mutations in co-**cultured** cells.
 AU Fahrig R.; Rupp M.; Steinkamp-Zucht A.; Bader A.
 CS R. Fahrig, Fraunhofer-Institute for Toxicology, Aerosol Research,
 Department of Genetics, Nikolai-Fuchs-Strasse 1, D-30625 Hannover, Germany
 SO Toxicology in Vitro, (1998) 12/4 (431-444).
 Refs: 30
 ISSN: 0887-2333 CODEN: TIVIEQ
 PUI S 0887-2333(98)00005-8
 CY United Kingdom
 DT Journal; Article
 FS 052 Toxicology
 LA English
 SL English
 AB Loss of cytochrome P-450 content is a common feature in conventional
culture systems of primary hepatocytes. In contrast to the
 standard in **vitro** situation, in vivo each hepatocyte is exposed
 to an extracellular matrix (space of Disse) at two opposing basolateral
 surfaces. This in vivo symmetry has been reconstructed in **vitro**
 by **culturing** rat or human hepatocytes within two layers of
 collagen, thus forming a sandwich configuration. Activation of
 dimethylbenzanthracene (DMBA) or benzo[a]pyrene (BaP) was studied in rat
 and human hepatocytes. Genotoxic effects were studied in a
 three-dimensional co- **culture** model between sandwich hepatocytes
 and mammalian cells using the comet **assay** for detection of DNA
 strand breaks, and the HPRT test for detection of **gene**
 mutations. Sandwich hepatocytes generated active metabolites. The
 maintenance of metabolic properties in hepatocytes was dependent on
 extracellular matrix geometry. The number of DMBA- or BaP- induced
 genotoxic effects tended to be higher than in standard S-9 mix
assays. While the ability to activate indirect carcinogens
 disappears within hours in primary hepatocytes, hepatocyte sandwich
cultures enhance their ability to activate indirect carcinogens
 within 1 wk and retain this activity for up to 2 wk. This is the main
 advantage of the sandwich method over the more simple and conventional
assays. While freshly isolated hepatocytes, regardless of whether
 in sandwich **culture** or in conventional **assays**, are
 injured by the isolation procedure and possess a corresponding reduced
 activation ability, hepatocytes in sandwich **cultures** recover
 over the course of a few days, and acquire a much higher ability to
 activate indirect carcinogens. Consequently, the indirect carcinogens BaP
 and DMBA, which were ineffective (BaP) or exhibited only weak effects
 (DMBA) at a concentration of 160 nmol/ml in 1-2-day-old hepatocytes, were
 clearly effective (BaP) or showed about a threefold increase in
 genotoxicity (DMBA) in 8-day-old hepatocytes in sandwich co-
culture. In contrast to the experiments with S-9 mix, which is
 toxic to mammalian cells and does not allow treatment times of more than
 2-3 hr, cells in co-**culture** with human or rat hepatocytes can be
 treated for at least 24 hr. The use of sandwich **cultures** has not
 yet been described for genotoxicity studies. The results of the present
 study may perhaps facilitate the acceptance of this method as a co-
culture model for the field of genetic toxicology. Use of
 hepatocytes alone for genotoxicity studies cannot be recommended for
 difficulties in isolating intact cells from the sandwich **cultures**
 . The use of human hepatocytes in sandwich co-**culture** should
 enable a more relevant evaluation of potential human genotoxicity with
 specific chemicals and should put the extrapolation of genetic toxicology
 data from animal species to humans on a more scientific basis. Beyond
 that, experiments with animals in vivo could be avoided.

L21 ANSWER 39 OF 46 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
 on STN
 AN 92237889 EMBASE
 DN 1992237889
 TI C-Ha-ras **gene mutation** and activation precede
 pathological changes in DMBA-induced in vivo carcinogenesis.
 AU Kwong Y.Y.; Husain Z.; Biswas D.K.
 CS Laboratory of Molecular Biology, Harvard School of Dental Medicine, 188
 Longwood Avenue, Boston, MA 021115, United States
 SO Oncogene, (1992) 7/8 (1481-1489).
 ISSN: 0950-9232 CODEN: ONCNES
 CY United Kingdom
 DT Journal; Article
 FS 005 General Pathology and Pathological Anatomy
 016 Cancer
 022 Human Genetics
 LA English
 SL English
 AB We have previously reported a stage-specific and sequential overexpression
 of the c-Ha-ras and c-erbB genes in 7, 12-dimethylbenzanthracene
 (DMBA)-induced in vivo carcinogenesis in hamster buccal pouch epithelium
 (HBPE). In this investigation, the immunoreactive protein product of the
 c-Ha-ras **gene** (p21 protein) was **identified** in HBPE
 cells, specifically in treated tissues and **cultured** cells
 established after 3 weeks of DMBA treatment. Microscopic examination did
 not show any histopathological changes in these tissues. The p21 protein
 was detected in a few selective cells, which were dispersed away from the
 more densely populated basal layer. The overexpression of the c-Ha-ras
gene was accompanied by a point **mutation** of A→T
 in codon 61 (CAA), inducing an amino acid substitution from the wild-type
 glutamine to leucine in the peptide. The concurrent molecular
 modifications preceded any detectable histopathological changes. The
 cellular morphology and orientation in treated HBPE at this early stage
 was indistinguishable from the control tissue. Yet the genetic
 alterations, such as the point **mutation** and overexpression of
 the **gene**, were evident at the predysplastic stage. Amplification
 and overexpression of the second protooncogene, c-erbB, and its product,
 epidermal growth factor receptor (EGFR), were detected in HBPE cells at
 the later stages of extensive cell proliferation and invasion. By using
 double antibodies and two immunoreporter systems, we demonstrated
 overexpression of both c-Ha-ras and c-erbB genes in the same HBPE cells
 during this chemically induced in vivo carcinogenesis.

L21 ANSWER 41 OF 46 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
 on STN
 AN 87231439 EMBASE
 DN 1987231439
 TI Analysis of the ras(H) oncogene and its p21 product in chemically induced
 skin tumors and tumor-derived cell lines.
 AU Harper J.R.; Reynolds S.H.; Greenhalgh D.A.; Strickland J.E.; Lacal J.C.;
 Yuspa S.H.
 CS Laboratory of Cellular Carcinogenesis and Tumor Promotion, National Cancer
 Institute, Bethesda, MD, United States
 SO Carcinogenesis, (1987) 8/12 (1821-1825).
 ISSN: 0143-3334 CODEN: CRNGDP
 CY United Kingdom
 DT Journal
 FS 013 Dermatology and Venereology
 016 Cancer
 022 Human Genetics
 LA English
 AB Mouse skin papillomas and squamous cell carcinomas induced by initiation
 with 7,12-dimethylbenz[a]anthracene and promotion with phorbol
 esters, such as 12-O-tetradecanoyl phorbol-13-acetate, frequently contain
 an activated Harvey ras **gene**. Six murine epidermal cell lines
 established from pooled skin papillomas previously tested negative in the
 NIH-3T3 **assay**, but have an altered differentiation program by a
 variety of criteria. The Harvey ras **gene** and its p21 protein
 product from these cell lines have been analyzed for alterations
 responsible for their altered growth and differentiation properties that
 were undetectable by 3T3 transfection **assays**. In comparison with
 primary papillomas and carcinomas, shown to have a point **mutation**
 in codon 61 of the Harvey ras **gene**, resulting in a p21 product
 with the diagnostic alteration in SDS-PAGE, the papilloma cell lines
 exhibited neither the codon 61 **mutation**, nor p21 product with
 altered migration in SDS-PAGE. These findings suggest that these papilloma
 cell lines contain a genetic lesion(s), other than Harvey ras activation,
 that may be responsible for their altered epithelial differentiation
 patterns and thus may serve as a useful model for **identifying**
 lesions involved in malignant conversion.

L21 ANSWER 38 OF 46 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN
AN 95323882 EMBASE
DN 1995323882
TI Stereoselectivity of activation of 7,12-dimethylbenz[a]anthracene
-3,4- dihydrodiol to the anti-diol epoxide metabolite in a human mammary
carcinoma MCF-7 cell-mediated V79 cell **mutation assay**.
AU Lau H.H.S.; Coffing S.L.; Lee H.; Harvey R.G.; Baird W.M.
CS Department of Medicinal Chemistry, Hansen Building, Purdue University, West
Lafayette, IN 47907, United States
SO Chemical Research in Toxicology, (1995) 8/7 (970-978).
ISSN: 0893-228X CODEN: CRTOEC
CY United States
DT Journal; Article
FS 052 Toxicology
LA English
SL English
AB 7,12-Dimethylbenz[a]anthracene (DMBA), one of the most

carcinogenic polycyclic aromatic hydrocarbons in rodent bioassays, is
metabolically activated in many tissues to 'bay-region'
DMBA-3,4-diol-1,2-epoxides (DMBADE). Unlike benzo[a]pyrene, for which the
high biological activity of the (7R,8S)-diol-(9S,10R)-epoxide has been
established, the low chemical stability of anti-DMBADE has made it
impossible to evaluate the role of specific stereoisomers in the
biological activity of DMBA. In order to characterize the role of
formation of DMBADE diastereomers in the induction of mutations,
postlabeling **assays** using [35S]phosphorothioate with adduct
separation by HPLC and immobilized boronate chromatography analyses were
developed to allow separation and quantitation of DNA adducts formed from
each stereoisomer of DMBADE. In DMBA-treated hamster embryo cell
cultures, large quantities of three major adducts
(anti-DMBADE-deoxyguanosine, anti- DMBADE-deoxyadenosine, and
syn-DMBADE-deoxyadenosine) along with five minor adducts were completely
resolved and quantitated. The DNA isolated from a human mammary carcinoma
MCF-7 cell-mediated V79 cell **mutation assay** treated
with increasing doses of racemic DMBA-3,4-dihydrodiol contained large
amounts of two anti-DMBADE-DNA adducts. The anti-DMBADE adducts accounted
for more than 90% of the total adducts at all doses. The number of
6-thioguanine- resistant **mutants** was proportional to the amount
of anti-DMBADE-DNA adducts. The results demonstrate that the MCF-7 human
mammary tissue carcinoma cell line stereoselectively activates
DMBA-3,4-dihydrodiol to mutagenic anti- DMBADE and indicate that human
cells can effectively activate bay-region diols of hydrocarbons containing
a methyl-hindered bay region, a structural feature frequently found in
highly carcinogenic polycyclic aromatic hydrocarbons.

L21 ANSWER 24 OF 46 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1993:74860 CAPLUS

DN 118:74860

TI Detection of mammalian carcinogens with an immunological DNA synthesis-inhibition test

AU Heil, Juergen; Reifferscheid, Georg

CS Dep. Environ. Mol. Genotoxicity, Univ. Mainz, Mainz, 6500, Germany

SO Carcinogenesis (1992), 13(12), 2389-94

CODEN: CRNGDP; ISSN: 0143-3334

DT Journal

LA English

AB The Salmonella **gene mutation assay** (Ames

test) is the most widely used test for the screening of mutagens.

However, many in **vitro** tests hold unsatisfactory validity data, presumably because of the inability of present short-term tests to detect nongenotoxic carcinogens, which are increasingly being brought into focus in the discussions of genesis of cancer. One principle often neglected in this context is the property of genotoxic agents to inhibit replicative DNA synthesis in (proliferating) eukaryotic cells. The authors believe that this early response to DNA damage is important in the multistage process of carcinogenesis. Accordingly, the authors proposed that a DNA synthesis-inhibition test should be included in the test batteries for carcinogen screening. The development of an appropriate DNA synthesis-inhibition test based on immunol. techniques is reported.

L20 ANSWER 1 OF 9 MEDLINE on STN
 AN 2001047126 MEDLINE
 DN PubMed ID: 10943946
 TI Establishment and characterization of a cell line (HCDB-1) derived from a hamster buccal pouch carcinoma induced by DMBA and Taiwanese betel quid extract.
 AU Lin S C; Chang K W; Chang C S; Yu S Y; Chao S Y; Wong Y K
 CS Institute of Oral Biology and Department of Dentistry, National Yang-Ming University, Taipei, Taiwan, ROC.
 SO Proceedings of the National Science Council, Republic of China. Part B, Life sciences, (2000 Jul) 24 (3) 129-35.
 Journal code: 8502426. ISSN: 0255-6596.
 CY CHINA (REPUBLIC: 1949-)
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 200012
 ED Entered STN: 20010322
 Last Updated on STN: 20010322
 Entered Medline: 20001204
 AB This study identified that the carcinogenesis of hamster buccal pouch (HBP) induced by 7,12-dimethylbenz[a]anthracene (DMBA) was greatly enhanced (18 folds) by a combination treatment with Taiwanese betel quid (BQ) extract. A new cell line, HCDB-1, has been established from induced carcinomas. The **cultured** monolayer cells were epithelioid in shape with irregular nuclei. They demonstrated abundant cytokeratin and tonofilaments; however, ultrastructural well-organized desmosomes were lacking. The HCDB-1 cell exhibited population doubling in 19 h and was highly tumorigenic in nude mice. A C-->T transition at codon 141 (Ala to Val) of the p53 **gene** was detected in this cell. This **mutation** is equivalent to a specific temperature-sensitive mouse p53Ala135Val **mutant** that causes transformation by shifting to 37.5 degrees C. HCDB-1 is the first cell line established from the HBP model of oral carcinogenesis induced by DMBA/Taiwanese BQ extract. It might be valuable for exploring the molecular pathogenesis of oral cancer.

L6 ANSWER 11 OF 23 MEDLINE on STN
 AN 1999165869 MEDLINE
 DN PubMed ID: 10064862
 TI Repair of DNA lesions: mechanisms and relative repair efficiencies.
 AU Braithwaite E; Wu X; Wang Z
 CS Graduate Center for Toxicology, University of Kentucky, 306 Health
 Sciences Res. Building, Lexington, KY 40536-0305, USA.
 NC CA67978 (NCI)
 ES5796 (NIEHS)
 SO Mutation research, (1999 Mar 8) 424 (1-2) 207-19.
 Journal code: 0400763. ISSN: 0027-5107.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199905
 ED Entered STN: 19990517
 Last Updated on STN: 19990517
 Entered Medline: 19990505
 AB DNA is frequently damaged by endogenous agents inside the cells. Some
 exogenous agents such as polycyclic aromatic hydrocarbons (PAHs) are
 ubiquitous in the environment and may thus contribute to the 'background'
 DNA damage in humans. DNA lesions are normally removed by various repair
 mechanisms. The major repair mechanisms for various DNA lesions are
 summarized. In contrast to the extensively studied repair mechanisms,
 much less is known about the relative repair efficiencies of various DNA
 lesions. Since DNA repair is a crucial defense against carcinogenesis, it
 may constitute an important factor affecting the carcinogenicity of DNA
 damaging agents. We have adopted a human cell-free system for measuring
 relative DNA repair efficiencies based on the concept of repair
 competition between acetylaminofluorene adducts and other DNA lesions of
 interest. Using this in vitro system, we determined the relative repair
 efficiencies of PAH adducts induced by: anti-(+/-)-benzo[a]pyrene-trans-
 7,8-dihydrodiol-9,10-epoxide (BPDE), anti-(+/-)-benz[a]**anthracene**
 -trans-3,4-dihydrodiol-1,2-epoxide (BADE-I), anti-(+/-)-benz[a]
anthracene-trans-8,9-dihydrodiol-10, 11-epoxide (BADE-II),
 anti-(+/-)-benzo[b]fluoranthene-trans-9, 10-dihydrodiol-11,12-epoxide
 (BFDE), anti-(+/-)-chrysene-trans-1, 2-dihydrodiol-3,4-epoxide (CDE), and
 anti-(+/-)-dibenzo[a, l]pyrene-trans-11,12-dihydrodiol-13,14-epoxide
 (DBPDE). While damage by BPDE, DBPDE, CDE, and BFDE were repaired by
 nucleotide excision repair as efficiently as AAF adducts, the repair of
 BADE-I and BADE-II adducts were significantly slower in human cell
 extracts. Damage by DBPDE at 3 microM in vitro yielded approximately
 5-fold higher DNA adducts than BPDE as determined by quantitative PCR.
 This potent DNA reactivity may account in part for the potent
 carcinogenicity of dibenzo[a,l]pyrene. The correlation of these results
 to the carcinogenic properties of the PAH compounds is discussed.
 Furthermore, we show that NER plays a role in AP site repair in vivo in
 the eukaryotic model organism **yeast**.
 Copyright 1999 Elsevier Science B.V.